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**From:** John German [john@theicct.org]  
**Sent:** 5/30/2014 12:58:30 PM  
**To:** Bunker, Byron [bunker.byron@epa.gov]; Olechiw, Michael [olechiw.michael@epa.gov]; Wehrly, Linc [wehrly.linc@epa.gov]  
**Subject:** Fwd: WVU report on LDV diesel PEMS testing  
**Attachments:** PastedGraphic-2.pdf; ATT00001.htm; WVU - PEMS diesel testing report for ICCT\_Final - May2014.pdf; ATT00002.htm

FYI. I am forwarding the email I sent to Stuart Johnson of VW. Stuart responded, saying he is on a trip this week and will contact me next week.

Also attached is the final WVU report. It hasn't been released yet, so please keep it within EPA for the time being (it should be released soon).

John

Begin forwarded message:

**From:** John German <john@theicct.org>  
**Subject:** **WVU report on LDV diesel PEMS testing**  
**Date:** May 28, 2014 1:45:25 PM EDT  
**To:** Stuart Johnson <stuart.johnson@vw.com>

Stuart,

Attached is WVU's final report on the 3 LDV diesel vehicles they tested, using PEMS. It hasn't been released yet, so please keep it within VW for the time being, but I thought you would appreciate a heads-up. It should be released publicly soon, although we do not intend to make a big press release out of the report. We plan on posting it on our website and letting it go into our RSS feed, but nothing more -- no publication announcement, no blogs, no twittering.

We have been discussing internally why the VW vehicles had such high emissions in-use. One thought was that in-use driving had higher loads and, thus, might be exceeding the capacity of the NOx control systems or the systems might not be calibrated as well at higher loads. However, the US06 test results for NOx at CARB were much lower than the in-use highway route (#1) used for the PEMS testing, even though the acceleration rates (Figure 3.12 in the report) and the CO2 emissions were much higher on the US06 than on the in-use highway route. In addition, the in-use urban routes (#2- LA, #4-SD, #5-SF) had NOx emissions 2-3 times higher than the in-use highway route.

Another thought is that the catalyst might not be getting hot enough to work properly in-use, similar to the in-use HD diesel NOx issue. The problem I have with this theory is that NOx emissions over NEDC testing at CARB were quite low.

The following table compares the chassis dyno test data from the CARB logs (FTP, NEDC, US06) with the WVU PEMS results from Tables 4.3 and 4.6 of the report: